

COMMONWEALTH OF VIRGINIA
Department of Environmental Quality
Tidewater Regional Office

STATEMENT OF LEGAL AND FACTUAL BASIS

Southeastern Public Service Authority of Virginia
Portsmouth, Virginia
Permit No. TRO-61018

Title V of the 1990 Clean Air Act Amendments required each state to develop a permit program to ensure that certain facilities have federal Air Pollution Operating Permits, called Title V Operating Permits. As required by 40 CFR Part 70 and 9 VAC 5 Chapter 80, Southeastern Public Service Authority has applied to renew their Title V Operating Permit for its Portsmouth facility. The Department has reviewed the application and has prepared a draft Title V Operating Permit.

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I. Facility Information

Permittee

Southeastern Public Service Authority of Virginia
723 Woodlake Drive
Chesapeake, VA 23320-7463

Responsible Official

John S. Hadfield
Executive Director

Facility

SPSA Municipal Waste Combustor Facilities
3809 Elm Avenue
Portsmouth, VA 23704-7101

Contact Person

Scott D. Whitehurst
Superintendent of Environmental Management
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County-Plant Identification Number: 51-740-00078

Facility Description:

NAICS numbers: 562213 and 562219 (Waste management), 221330 (Steam Generation),
221119 (Other Electrical Generation) and 924110 (Administration)

Waste is received on the Refuse Derived Fuel (RDF) plant tipping floor and separated into processable and non-processable waste. Processable bulky waste is diverted to the bulky waste shredder for shredding to manageable sizing. This waste is then introduced back on the tipping floor. All processable waste is then introduced to 3 process lines, each with a shredder, where sorting, sizing and separation of grit, ferrous metal, and aluminum takes place through a series of trommels, magnets, and hand picking stations. Waste is then loaded onto the RDF transfer conveyor where it is conveyed to the steam plant for combustion.

The steam plant consists of four combustion trains in which refuse derived fuel (RDF), coal or oil is combusted to produce steam and electricity. The primary fuels burned are RDF and coal. The four combustion trains are independent but can operate simultaneously. Each combustion train consists of a boiler, a spray dryer absorber (SDA), and a fabric filter (FF). The units utilize the SDA and FF, as well as good combustion practices (GCP), to reduce the levels of Municipal Waste Combustor (MWC) organics (dioxins/furans), MWC acid gases (sulfur dioxide and hydrogen chloride), MWC metals (particulate matter, opacity, cadmium, lead, and mercury), and carbon monoxide prior to exhausting through the stack. Each combustion train is also equipped with a No. 2 fuel oil-fired burner which provides heat during unit startup and shutdown.

Coal is unloaded and transferred to storage or directly to the boilers for combustion via a set of enclosed conveyors. The four transfer points of the conveyor system, as well as the conical for each unit, are equipped with fabric filters to control particulate emissions generated during the transfer process. In addition, the facility operates a diesel-fired standby generator, an auxiliary boiler, two No. 2 fuel oil storage tanks, a lime silo, an ash conveyor (with negligible emissions), and truck traffic, as well as a number of insignificant activities.

The facility is a Title V major source of NO_x, SO₂, CO, PM, PM₁₀ and HCl. This source is located in an attainment area for all pollutants, and is a PSD major source. The facility was previously permitted under a Minor NSR Permit issued on May 29, 1996, and an amended PSD Permit issued on August 20, 2003.

II. COMPLIANCE STATUS

A full compliance evaluation of this facility, including a site visit, has been conducted. In addition, all reports and other data required by permit conditions or regulations, which are submitted to DEQ, are evaluated for compliance. Based on these compliance evaluations, the facility has not been found to be in violation of any state or federal applicable requirements at this time.

III. EMISSION UNIT AND CONTROL DEVICE IDENTIFICATION

The emissions units at this facility are listed in Section II of the Title V permit.

IV. EMISSIONS INVENTORY

A copy of the 2006 emission inventory is attached. Emissions are summarized in the following tables.

2006 Actual Emissions

	Pollutant Emission in Tons/Year						
	NO _x	SO ₂	CO	PM ₁₀	VOC	HCl	HF
Total	1473	388	561	109	0.3	270	2.5

All other pollutants were emitted at rates less than 1 ton per year.

V. FUEL BURNING EQUIPMENT REQUIREMENTS

A. Limitations

The following federal regulations have been determined to be applicable to this facility:

40 CFR Part 60 Subpart Cb - Emissions Guidelines and Compliance Times for Large Municipal Waste Combustors That are Constructed on or Before September 20, 1994

40 CFR Part 60 Subpart Db - Standards of Performance for Industrial-Commercial-Institutional Steam Generating Units

40 CFR Part 60 Subpart Eb - Standards of Performance for Large Municipal Waste Combustors for Which Construction is Commenced After September 20, 1994 or for Which Modification or Reconstruction is Commenced After June 19, 1996 (as referenced in Cb)

40 CFR Part 60 Subpart Kb is no longer applicable to this facility due to the changes in this regulation since 2001.

The following Virginia Administrative Codes that have specific emission requirements have been determined to be applicable:

9 VAC 5 Chapter 50	New and Modified Stationary Sources
9 VAC 5 Chapter 50	Article 1: Visible Emissions and Fugitive Dust/Emissions
9 VAC 5 Chapter 50	Article 4: Standards of Performance for Stationary Sources
9 VAC 5 Chapter 50	Article 5: EPA Standards of Performance for New Stationary Sources
9 VAC 5 Chapter 80	Part I: Permits for New and Modified Sources
9 VAC 5 Chapter 80	Article 1: Federal Operating Permits for Stationary Sources
9 VAC 5 Chapter 80	Article 2: Permit Program Fees for Stationary Sources

9 VAC 5 Chapter 80	Article 4: Insignificant Activities
9 VAC 5 Chapter 80	Article 8: Permits for Major Stationary Sources and Major Modifications Locating in Prevention of Significant Deterioration Areas

The emission limits under NSPS Subpart Cb have been updated as of a revision to the NSPS dated May 10, 2006. Condition III A. 17 has been updated to reflect the new emission limits that will be in effect as of April 28, 2009. The NSPS also added a new category of combustors that these boilers fit into: they are now considered "Spreader stoker fixed floor refuse-derived fuel-fired combustor/100% coal capable". This new category changed the CO limit for these boilers from 200 ppmv to 250 ppmv. The new averaging time is a 24-hour block average, geometric mean.

Condition III.A.13 has been changed to remove the requirement for nitrogen content being part of the oil Certification that is required. This has been done because the oil companies do not regularly test the nitrogen content, so the facility will be responsible for doing the sampling and testing (See Condition III.A.14).

B. Monitoring and Recordkeeping

The RDF boilers (044, 045, 046 and 047) are subject to 40 CFR Part 60 Subpart Cb (and Eb as referenced in Cb) while burning RDF and will prove compliance with the standards using the methods described in 40 CFR 60.38b. This includes having COMS to monitor the opacity from these boilers, having CEMs for SO₂, NO_x and CO, conducting annual performance testing (with no more than 12 calendar months between tests) to prove compliance with the PM, HCl, HF, Cadmium, Lead, Mercury and Dioxin/Furan emission limits.

The RDF boilers (044, 045, 046 and 047) are subject to 40 CFR Part 60 Subpart Db while burning coal and will prove compliance with the standards using the methods described in 40 CFR 60.48b. Due to the requirements listed above for the boilers while burning RDF, the same monitoring requirements shall be in effect for the boilers while burning coal, with the addition of fuel certifications being supplied by the vendor to prove compliance with the sulfur and ash limits.

The RDF boilers (044, 045, 046 and 047) use No. 2 fuel oil to start up the boilers. They are required to have No. 2 fuel oil certifications that meet the sulfur and nitrogen content limits listed in the permit. The boilers are not subject to 40 CFR Part 60 Subpart Db while firing oil due to the firing rate limitations (85 mmBtu/hr) of the burners. By using the daily oil usage and the hours of operating on oil, the facility will calculate and average the hourly oil usage rate to ensure that they do not exceed the 625 gal/hr limit. This limits the boilers to a rated capacity of 85 MMBtu/hr. This limitation keeps the facility from being applicable to Db requirements when firing oil.

The RDF boilers are equipped with spray dryers and fabric filters to control emissions. The spray dryer absorbers shall be monitored by the water/lime slurry injection flow. This flow shall be checked and logged at a frequency of once per week. The fabric filters shall be equipped with a differential pressure gauge. This gauge shall be monitored and logged at a frequency of once per week.

Opacity monitoring of the generator is required each time the unit is operating to show compliance with the visible emissions limits.

Opacity monitoring for the auxiliary boiler is required each time the unit is operating to show compliance with the visible emissions limits.

The hours of operation for both the auxiliary boiler and the generator will be monitored to show compliance with the hourly limit. The fuel supplier certifications for the No. 2 fuel oil shall prove compliance to the fuel limits specified in Condition III.A.12. The annual capacity factor will have to be calculated for the auxiliary boiler, and will be calculated as a monthly rolling average.

C. Reporting

The following table lists the various reports that the facility must submit in accordance with the permit:

Report	Equipment	Frequency	Regulatory basis
NSPS Db Reports Auxiliary boiler	Opacity/VEE readings	Quarterly (Semi-annual if it applies)	NSPS Db and 9 VAC 5-50-50C
	Fuel Analysis Report		
	Capacity Factor Report		
Excess emission reports	RDF CEMS	Quarterly	NSPS Db and Cb and 9 VAC 5-50-50C
Annual compliance certification reports	Title V permit conditions	Annually	9 VAC 5-80 Article 1
Annual emission statement	Facility	Annually	9 VAC 5-20-160-
Semi-Annual Monitoring Report	Facility	Semi- Annually	9 VAC 5-20-160
Fuel Quality Reports	Distillate/Fuel Oil #2 certifications	Semi- Annually	NSPS Db
Stack test protocol	Variable RDF Units	For each occurrence	NSPS Cb,
Stack testing reports	Variable RDF Units	For each occurrence	NSPS Cb,
RATA reports	Specific RDF Units	For each occurrence	NSPS Cb
NSPS Monitoring Report	See list in 40 CFR 60.59b(g) and (h)	Semi-annual	NSPS Cb - 60.39b

D. Testing

SPSA is required by 40 CFR Part 60 Subpart Cb to perform Stack testing on a regular basis rotating emission units each time to prove compliance with the limitations of the regulation for PM, Cadmium, Lead, Hydrochloric Acid, Hydrogen Fluoride and Dioxin/Furan.

VI. COAL HANDLING REQUIREMENTS

A. Limitations

The limitations for this part of the facility deal with fugitive emissions from the handling of coal. Wet suppression system is required for the coal piles and fabric filters are required for the silos, bins and conveyors of coal.

B. Monitoring and Recordkeeping

SPSA is required to perform visual emissions evaluations of the coal piles once each week and they must check the wet suppression system monthly.

The fabric filters are required to have differential pressure gauges to monitor performance of the bags.

C. Reporting and Testing

There are no reporting or testing requirements for this part of the facility.

VII. RDF HANDLING OPERATIONS REQUIREMENTS

A. Limitations

Fabric filters are required on the processing lines and the shredder. There are two throughput limitations: one for processed solid waste; and one for unprocessed solid waste. There are no enforceable throughputs for the individual processes at this part of the facility, therefore, the emission limits for the process lines, the bulky waste shredder, the tipping floor, and the conveyor to the steam plant have been streamlined out.

B. Monitoring and Recordkeeping

The fabric filters are required to have pressure gauges to monitor the pressure drop across the bags. Visible emissions from the fabric filters must be monitored.

The facility must keep records of the throughputs of solid waste, both processed and unprocessed.

C. Reporting and Testing

There are no reporting or testing requirements for this part of the facility.

VIII. LIME SILO AND MISCELLANEOUS REQUIREMENTS

A. Limitations

Fabric filters are required on the lime silo. The throughput of lime is limited.

B. Monitoring and Recordkeeping

Opacity must be monitored on the lime silo, the ash conveyor system, the RDF fire pump engine and the SPP fire pump engine. The throughput of lime is kept on file.

C. Testing

There are no testing requirements for this part of the facility.

IX. COMPLIANCE ASSURANCE MONITORING (CAM)

CAM does not apply to the RDF boilers because NSPS Cb was promulgated after 1990. (See 40 CFR 64)

X. STREAMLINED REQUIREMENTS

A. Fuel Burning Equipment Section

Condition III.A.13 has been changed to remove the requirement for nitrogen content being part of the oil Certification that is required. This has been done because the oil companies do not regularly test the nitrogen content, so the facility will be responsible for doing the sampling and testing on a monthly basis (See Condition III.A.14).

Condition III.A.34 - removed the six-minute higher opacity exception because these units are subject to NSPS Cb, (60.33b) which does not allow this exception. Condition III.A.35 was separated from this condition because this unit is allowed the six minute exception.

B. RDF Handling Operations Section

We have streamlined out the following four emission limit conditions from the minor NSR permit dated 5/29/96. They are for the RDF Handling section of the facility. There are no enforceable throughputs for the individual processes listed in this 1996 permit, therefore the conditions are not enforceable and have been streamlined out.

8. Emissions from the operation of the bulky waste shredder shall not exceed the limits specified below:

Total Suspended Particulate	1.0 lbs/hr	2.2 tons/yr
PM-10	1.0 lbs/hr	2.2 tons/yr

Annual emissions shall be determined as the sum of each consecutive 12-month period.
(Condition 8 of the 5/29/96 Permit)

9. Emissions from the operation of each process line shall not exceed the limits specified below:

Total Suspended Particulate	11.1 lbs/hr	42.1 tons/yr
PM-10	11.1 lbs/hr	42.1 tons/yr

Annual emissions shall be determined as the sum of each consecutive 12-month period.
(Condition 9 of the 5/29/96 Permit)

10. Emissions from the operation of the tipping floor shall not exceed the limits specified below:

Total Suspended Particulate	2.0 lbs/hr	8.2 tons/yr
PM-10	2.0 lbs/hr	8.2 tons/yr

Annual emissions shall be determined as the sum of each consecutive 12-month period.
(Condition 10 of the 5/29/96 Permit)

11. Emissions from the operation of the RDF conveyor to the steam plant shall not exceed the limits specified below:

Total Suspended Particulate	2.6 lbs/hr	9.8 tons/yr
PM-10	2.6 lbs/hr	9.8 tons/yr

Annual emissions shall be determined as the sum of each consecutive 12-month period.
(Condition 11 of the 5/29/96 Permit)

Condition V.A.2 has been changed to remove the short term limitation of "200 lb/hr" for the processing of unprocessed solid waste. We do not limit the short term processing rate of processes and it serves no purpose.

C. Storage Tanks

The entire Storage Tank Section has been streamlined out of the permit because the storage tanks storing #2 Fuel oil are no longer applicable to NSPS Kb. The requirements were put in the underlying minor NSR permit at the time of permitting because at that time they were Kb applicable. The emission units have been moved to the Insignificant Emissions Units table in Section VII of the permit.

XI. GENERAL CONDITIONS

The permit contains general conditions required by 40 CFR Part 70 and 9 VAC 5-80-110 that apply to all Federal-operating permitted sources. These include requirements for submitting semi-annual monitoring reports and an annual compliance certification report. The permit also requires notification of deviations from permit requirements or any excess emissions.

A. Comments on General Conditions (Section X of Permit)

8. B. Permit Expiration

This condition refers to the Board taking action on a permit application. The Board is the State Air Pollution Control Board. The authority to take action on permit application(s) has been delegated to the Regions as allowed by §2.1-20.01:2 and §§§§§10.1-1185 of the *Code of Virginia*, and the "Department of Environmental

Quality Agency Policy Statement No. 2-2003”.

9. F. Failure/Malfunction Reporting

Section 9 VAC 5-20-180 requires malfunction and excess emission reporting within four hours of discovery. Section 9 VAC 5-80-250 of the Title V regulations also requires malfunction reporting; however, reporting is required within two days. Section 9 VAC 5-20-180 is from the general regulations. All affected facilities are subject to section 9 VAC 5-20-180 including Title V facilities. Section 9 VAC 5-80-250 is from the Title V regulations. Title V facilities are subject to both sections. A facility may make a single report that meets the requirements of 9 VAC 5-20-180 and 9 VAC 5-80-250. The report must be made within four daytime business hours of discovery of the malfunction.

In order for emission units to be relieved from the requirement to make a written report in 14 days the emission units must have continuous monitors meeting the requirements of 9 VAC 5-50-410.

10. U. Malfunction as an Affirmative Defense

The regulations contain two reporting requirements for malfunctions that coincide. The reporting requirements are listed in sections 9 VAC 5-80-250 and 9 VAC 5-20-180. The malfunction requirements are listed in General Condition U and General Condition F. For further explanation see the comments on general condition F.

11. Y. Asbestos Requirements

The Virginia Department of Labor and Industry under Section 40.1-51.20 of the Code of Virginia also holds authority to enforce 40 CFR 61 Subpart M, National Emission Standards for Asbestos.

XII. STATE ONLY APPLICABLE REQUIREMENTS

Both the odor and toxics regulations are state only applicable and are listed in the permit.

XIII. PUBLIC PARTICIPATION

The proposed permit will be placed on public notice in the Virginian Pilot from December xx, 2007 to January xx, 2007 and will be reviewed concurrently by EPA ending on January xx, 2008.